

FURTHER NOTES ON THE FLORA OF INDO-CHINA¹

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THIS brief article supplements a previous paper (Jour. Arnold Arb. 24: 362–374. 1943), and in it three new species and two new varieties are described, one new name is proposed, and four previously described species are for the first time recorded from Indo-China. The genera *Bredia* and *Staphiophyton* are new to that country. The types of the new forms herein described are deposited in the herbarium of the Arnold Arboretum.

ELAEOCARPACEAE

Elaeocarpus hainanensis Oliv. in Hook. Ic. Pl. 25: t. 2462. 1896.

Elaeocarpus linearifolius Knuth, Repert. Sp. Nov. 49: 66. 1940, syn. nov.

INDO-CHINA: Annam, Tourane and vicinity, J. & M. S. Clemens 3484 (isotype of *E. linearifolius*), May-June, 1927, shrub or small tree, river-margin, flowers dull yellow.

This Indo-Chinese plant, described by Knuth as *E. linearifolius*, is manifestly the same as the Hainan species. This is one of the many species common to both regions.

THEACEAE

Cleyera japonica Thunberg var. *tonkinensis* var. nov.

A typo speciei differt foliis obovatis, 4–6 cm. longis, 2.5–3.5 cm. latis, obtusis, fructibus longe pedicellatis, pedicellis ad 3 cm. longis.

INDO-CHINA: Tonkin, Ha-coi, Chuk-phai, Taai Wong Mo Shan and vicinity, W. T. Tsang 26987 (TYPE), Oct. 16–22, 1936, 29371, July 14–31, 1939, a small tree 20 ft. high, fairly common in thickets, fruits yellow or black.

Among the different varieties of the species as treated by Kobuski (Jour. Arnold Arb. 18: 118–129. 1937), this new variety is nearest var. *Morii* (Yamamoto) Masamune, but it may be readily distinguished by the smaller leaves with obtuse apices and by the much longer fruiting pedicels.

FLACOURTIACEAE

Hydnocarpus annamica sp. nov.

Arbor 8–10 m. alta, ramulis teretibus puberulis vel subglabris; foliis chartaceis oblongo-ellipticis, 10–14 cm. longis, 3.5–4.5 cm. latis, longe acuminatis (acumine 2–2.5 cm. longo), basi acutis, margine integris, supra in sicco atro-brunneis, glabris, subtus pallidioribus parce puberulis, venis lateribus utrinsecus 6 vel 7, supra distinctis, subtus elevatis, valde arcuatim adscendentibus, rete venularum utrinque subconspicuo; petiolo 1–2 cm. longo, puberulo vel glabrescente; floribus ignotis; fructu axillari solitario oblongo-ovoideo, circiter 3 cm. longo et 2 cm. lato, dense fulvo-

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velutino, pericarlo 0.5 mm. crasso, semine solitario, ovoideo, circiter 1.5 cm. longo et 1.3 cm. lato; pedicello 7 mm. longo, crasso.

INDO-CHINA: Annam, 12 kilometers north of Dankia, Lang-Biang, E. Poilane 18660 (TYPE), Jan. 13, 1931, a tree 8–10 m. high, on slightly rocky argillaceous soil, in forests, alt. 1200–1500 m.; the fruit has a strong odor.

In the absence of flowers, the species cannot be placed in the proper section of the genus. It is strongly characterized by the one-celled, one-seeded fruit. Prof. I. W. Bailey, who examined the structure of the wood, reports that in all respects it is that of a *Hydnocarpus*.

MELASTOMATACEAE

Bredia violacea sp. nov.

Frutex parvus, ramis teretibus hirsutis; foliis in paribus aequalibus, subchartaceis, oblongo-ovatis, circiter 9–10 cm. longis, 5.5–6 cm. latis, acuminate, basi distincte cordatis, 7-nerviis, margine hirsutis, supra sparse setosis, subtus leviter puberulis, venis venulisque supra subconspicuis, subtus distinctis; petiolis circiter 5 cm. longis, sparse hirsutis; inflorescentiis terminalibus cymoso-paniculatis, circiter 15 cm. longis, leviter puberulis et sparse longe hirsutis, pilis saepissime glandulosis, pedunculis 8–9 cm. longis, pedicellis circiter 1 cm. longis, violaceis, bracteolis minutis, vix 1 mm. longis; calycis tubo 5 mm. longo, lobis 4, late triangulari-ovatis, 3 mm. longis, 3.5 mm. latis, acutis vel subrotundatis, leviter puberulis et sparse longe hirsutis, in sicco distincte violaceis; petalis 4, membranaceis, oblongo-ovatis, 7–8 cm. longis, 4–5 cm. latis, late acutis, in sicco superne albidis, inferne violaceis; staminibus 8 aequalibus, filamentis glabris, circiter 6 mm. longis, antheris linearibus, leviter curvatis, olivaceis, circiter 8 mm. longis, longe acuminatis, connectivo sub theca antice tuberculato, postice breviter calcarato, stylo circiter 1.1 cm. longo, olivaceo.

INDO-CHINA: Tonkin, Tien-yen, Ho Yung Shan and vicinity, W. T. Tsang 30751 (TYPE), Oct. 13–Nov. 22, 1940.

In general appearance, this species closely resembles *Bredia tuberculata* (Guillaumin) Diels, but it differs, among other characters, in its cymose-paniculate instead of umbellate inflorescences. In the inflorescence character, it belongs to the group of *Bredia hirsuta* Blume. The new species is characterized by its broad distinctly violet calyx-lobes and its large violet anthers. The genus is new to Indo-China.

Stapfiophyton peperomiaefolium (Oliv.) Li, Jour. Arnold Arb. 25: 29. 1944.

Sonerila peperomiaefolia Oliv. in Hook. Ic. Pl. 19: t. 1814. 1889.

Gymnagathis peperomiaefolia Stapf, Ann. Bot. 6: 315. 1892.

INDO-CHINA: Tonkin, Ha-Coi, Taai Wong Mo Shan, Chan Uk Village near Chuk-phai, W. T. Tsang 29029, May 1–10, 1939, an herb, fairly common in thickets, in dry sandy soil, fruit brown. The species has previously been known only from Kwangtung.

This is an acaulescent plant which closely matches the syntype (C. Ford 336, photo. in herb. New York Botanical Garden), except that the leaves are somewhat broader and less acute. The Indo-Chinese specimen is in fruit, while the type is from a flowering plant.

Blastus membranifolius sp. nov. § *Desmoblastus*

Frutex, ramis junioribus minute subalbide tomentellis; foliis inaequalibus

vel aequalibus, tenuiter membranaceis, longe petiolatis, oblongis, 10–12 cm. longis, 3.5–6 cm. latis, longe acuminatis, basi subrotundatis vel rotundatis, utrinque et margine setulosis, nervis primariis 3 marginalibus duobus gracilioribus additis, venis transversalibus supra inconspicuis, subtus prominentibus; petiolo 1.5–7 cm. longo, subalbide tomentello; floribus axillaribus, solitariis vel 2- vel 3-fasciculatis, pedunculis circiter 7 mm. longis, tomentellis; calycibus obconico-quadrangularibus, extus tomentellis, 1.5 mm. longis, lobis brevibus; petalis rhomboideis, 2–3 mm. longis; staminibus 4, filamentis 2–3 mm. longis, antheris 1.5–2 mm. longis, apice rotundatis, connectivo sub theca calloso.

INDO-CHINA: Tonkin, Dam-ha, Sai Wong Mo Shan, Lung Wan Village, W. T. Tsang 30112 (TYPE), May 18-July 5, 1940.

The new species is allied to *Blastus tenuifolius* Diels and *B. setulosus* Diels, differing from both in the leaves being setulose on both surfaces and in the longer pedicels.

Memecylon nigrescens Hook. & Arn. Bot. Beechey Voy. 186. 1833; Merr. Lingnan Sci. Jour. 13: 65. 1934.

INDO-CHINA: Tonkin, Tien-yen, Ho Yung Shan and vicinity, W. T. Tsang 30643, Oct. 13-Nov. 22, 1940. Kwangtung, Hainan; new to Indo-China.

Memecylon ligustrifolium Champ. ex Benth. in Hook. Jour. Bot. Kew Gard. Miscel. 4: 117. 1852.

INDO-CHINA: Tonkin, northeast of Mon-cay, Pac-si and vicinity, W. T. Tsang 26950, Oct. 1–8, 1936, a shrub 10 ft. high, fairly common in thickets, in dry sandy soil, fruits black; Dam-ha, Sai Wong Mo Shan, Lomg Ngong Village, W. T. Tsang 30361, July 18-Sept. 9, 1940; Tien-yen, Ho Yung Shan and vicinity, W. T. Tsang 30654, Oct. 13-Nov. 22, 1940. Kwangtung, Kwangsi; new to Indo-China.

Memecylon coacerviflorum nom. nov.

Memecylon confertiflorum Merr. Jour. Arnold Arb. 19: 58. 1938, non Cogn. 1891.

INDO-CHINA: Southern Annam.

VERBENACEAE

Tsoongia axillarisflora Merr. var. *trifoliolata* var. nov.

A typo speciei differt foliis plerumque trifoliolatis.

INDO-CHINA: Tonkin, Dam-ha, Sai Wong Mo Shan, Lung Wan Village, W. T. Tsang 30135 (TYPE), May 18-July 5, 1940. KWANGTUNG: Shih Wan Tai Shan, Foo Lung, H. Y. Liang 69710, July 16, 1937, shrubby, scandent, in open forests, flowers yellow.

Callicarpa formosana Rolfe, Jour. Bot. 20: 358. 1882.

INDO-CHINA: Tonkin, Ha-coi, Chuk-phai, Taai Wong Mo Shan, Shuei Mei Village, W. T. Tsang 29378, July 14–31, 1939, a shrub 7 ft. high, fairly common, growing in clayey soil among scattered shrubs, flowers lavender; Dam-ha, Sai Wong Mo Shan, Lung Wan Village, W. T. Tsang 29947, May 18-July 5, 1940. Formosa, the Philippines, eastern and southern China; new to Indo-China.

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